REMARKS

The Examiner has stated objected to claims 17-22 and 27-29 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicants gratefully acknowledge the Examiner's indication of allowable subject matter.

The Examiner rejected claims 13-16 and 23-24 under 35 U.S.C. §102(B) as being unpatentable over Huang et al. (US 5,635,423)..

The Examiner rejected claims 25-26 and 30-32 under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Adams et al. (US 6566,242).

Applicants respectfully traverse the §102(b) and §103(a) rejections with the following arguments.

35 USC § 102 Rejections

The Examiner rejected claim 13 under 35 U.S.C §102(b) stating "Huang et al shows a method of fabricating a dual damascene structure, comprising: forming a first interconnect level comprising a first dielectric layer and including a multiplicity of first damascene or dual damascene conductive wires, each first damascene or dual damascene conductive wire extending from a top surface of said first dielectric layer a distance toward a bottom surface of said first dielectric layer, said distance less than a thickness of said first dielectric layer (col. 6, line 8-35, Fig. 5a-5c); forming a second interconnect level directly above and in contact with said first dielectric layer, said second interconnect level comprising a second dielectric layer and including a multiplicity of second dual damascene conductive wires, each second dual damascene conductive wire extending from a top surface of said second dielectric layer a distance toward a bottom surface of said second dielectric layer, said distance less than a thickness of said second dielectric layer; and forming a dual damascene conductive via bar within said second interconnect level and integral with and extending from a bottom surface of one of said multiplicity of said second dual damascene conductive wires and a top surface of one of said multiplicity of said first dual damascene conductive wires, said dual damascene conductive via bar having a length greater than its width, said length and width of said dual damascene conductive via bar extending in said plane defined by said top surface of said second dielectric layer (Col. 6, lines 8-37, Fig. 5a-5c)."

First, Applicants not the Examiner has cited Huang et al. col. 6, lines 8-37, Fig. 5a-5c without indicating which elements of Huang et al. col. 6, lines 8-37, Fig. 5a-5c correspond to which claim elements in Applicants claim 13. Because, there are several ways to interpret Huang et al. col. 6, lines 8-37, Fig. 5a-5c , the Examiner has made a full and complete response

to the Examiners rejection impossible. For example, is the "first interconnect level" of Applicants claim 13 element 52 or elements 52 and 53 of Huang et al. Fig. 5a-5c. For example, is the "second interconnect level" of Applicants claim 13 element 54 or elements 52 and 53 of Huang et al. Fig. 5a-5c. Since no actual conductive wires are shown in Huang et al. Fig. 5a-5c it and Huang et al. only mentions in col. 6, line 32-36 that "The dual damascene metallization technique to simultaneously fill the via and trench with conductive material" is not possible to know where the Examiner believes the three claim elements "first conductive damascene or dual damascene wire", "second dual damascene wire" and "dual damascene conductive via bar" would reside relative to layers 54, 53 and 52 of Huang et al. Figs. 5A-5c. If Applicants assume the trench is the wire then the "dual damascene via bar" is missing. Applicants respectfully request the Examiner indicate which claim elements of Huang et al. col. 6, lines 8-37, Fig. 5a-5c correspond to which claim elements in Applicants claim 13.

Second, as best understood by Applicants, Applicants contend that claim 13, as amended, is not anticipated by Huang et al. because Huang et al. does not teach each and every feature of claim 13.

As a first example Huang et al. does not teach ' a first conductive damascene or dual damascene wire", "a second dual damascene wire" and "a dual damascene conductive via bar" as Applicants claim 13 requires." Applicants respectfully point out no conductive elements of any sort are taught in Huang et al. col. 6, lines 8-37, Fig. 5a-5c. Further, the only figure in Huang et al. that could be construed as indicating a conductive element (element 88 of FIG. 8g) would teach that in Fig. 5a-5c Huang et al. is intending to teach a single "dual damascene wire" that extends the entire thickness of the interconnect level it is formed in.

As a second example, Huang et al. does not teach or suggest "said dual damascene conductive via bar having a length extending in a lengthwise direction greater than a width extending in a widthwise direction, said lengthwise direction and widthwise direction perpendicular to each other and parallel to said plane defined by said top surface of said second dielectric layer." Applicants respectfully point out that the via trench portion (narrow portion) of the dual damascene wire process described in Huang et al. FIGs. 5a-5c shows only two dimensions, depth and width (or length) and thus Huang et al. is not teaching "said dual damascene conductive via bar having a length greater than its width" as the Examiner alleges and Applicants claim 13 requires.

In the event, the Examiner believes that two of Figs. 5a-5C should be stacked (with layers 52,53 and 54 being a single layer", then as a third example, Huang et al. does not teach or suggest "each first damascene or dual damascene conductive wire extending from a top surface of said first dielectric layer a distance toward a bottom surface of said first dielectric layer, said distance less than a thickness of said first dielectric layer" or "each second dual damascene conductive wire extending from a top surface of said first dielectric layer a distance toward a bottom surface of said first dielectric layer, said distance less than a thickness of said first dielectric layer." Applicants respectfully point in this case Huang et al. is forming two dual damascene wires which extend completely through their respective dielectric layers and not "a distance toward a bottom surface of said first[second] dielectric layer, said distance less than a thickness of said first[second] dielectric layer" as Applicants claim 13 requires.

Based on the preceding arguments, Applicants respectfully maintain that claim 1 is not unpatentable over Huang et al. and is in condition for allowance. Since claims 14-24 depend

from claim 13, Applicants respectfully maintain that claims 14-24 are likewise in condition for allowance.

35 USC § 103 Rejections

The Examiner rejected claim 25 under 35 U.S.C §103 (a) stating that "Huang et al. shows a method of fabricating a dual damascene structure, comprising: providing a substrate; forming a dielectric layer on said top surface of said dielectric layer; forming a via bar opening in said dielectric layer, said via bar opening having a length greater than its width, said length and width of said via bar opening extending in said plane defined by said top surface of and dielectric layer, said via bar opening extending through the entire thickness of said dielectric layer; etching a first trench in said dielectric layer, said first trench aligned to said via bar opening, said first trench extending from said top surface of said dielectric layer toward a bottom surface of said dielectric layer a distance less than a thickness of said dielectric layer (col. 6, lines 8-37, Fig. 5a-5c), but Huang et al fails to disclosed applying an anti-reflective coating to a top surface of said dielectric layer, said antireflective coating filling said via bar opening; applying a masking layer to a top surface of said anti-reflective coating; etching said antireflective coating from said via bar opening and forming a first trench in said dielectric layer over said via bar opening, removing said masking layer and any remaining antireflective coating." and "Adams et al. teaches applying an anti-reflective coating to a top surface of said dielectric layer, said antireflective coating filling said via bar opening; applying a masking layer to a top surface of said anti-reflective coating; etching said antireflective coating from said via bar opening and forming a first trench in said dielectric layer over said via bar opening, removing said masking layer and any remaining antireflective coating (col. 7, lines 43-63).). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add ARC to

lithography process of Huang et al. lithography process because such a process is used to damascene wire pattern."

First, Applicants contend that the arguments presented supra with respect to the 35 USC 102(b) rejection of claim 13 apply to claim 25.

Second Applicants contend that the Examiners basis for combining references to wit "because such a process is used to damascene wire pattern" is incomprehensible and the rejection is improper because there is no suggestion in the prior art to combine the references as required by *Karsten Mfg. Corp. v. Cleveland Gulf Co.*, 242 F.3d 1376, 1385, 58 U.S.P,Q.2d 1286, 1293 (Fed. Cir. 2001) which states " In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would produce the claimed invention." The Examiner has not given a reason to combine, but merely stated what Adams et al. teaches. Second the alleged motivation does originate from prior art but has been supplied by the Examiner. Therefore, the Examiner has not established his prima facie case of obviousness.

Based on the preceding arguments, Applicants respectfully maintain that claim 25 is not unpatentable over Huang et al. in view of Adams et al. and is in condition for allowance. Since claims 26-32 depend from claim 25, Applicants respectfully maintain that claims 26-32 are likewise in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invite the Examiner to contact the Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account 09-0456.

Respectfully submitted,
FOR: McDevitt et al.

Dated: 12/19/2006

BY: Jack P. Friedman
Jack P. Friedman
Reg. No. 44,688
FOR:
Anthony M. Palagonia
Registration No.: 41,237

Schmeiser, Olsen & Watts
22 Century Hill Drive, Suite 302
Latham, New York 12110
(518) 220-1850
(518) 220-1857 Facsimile
Agent Direct Dial Number: (802)-899-5460